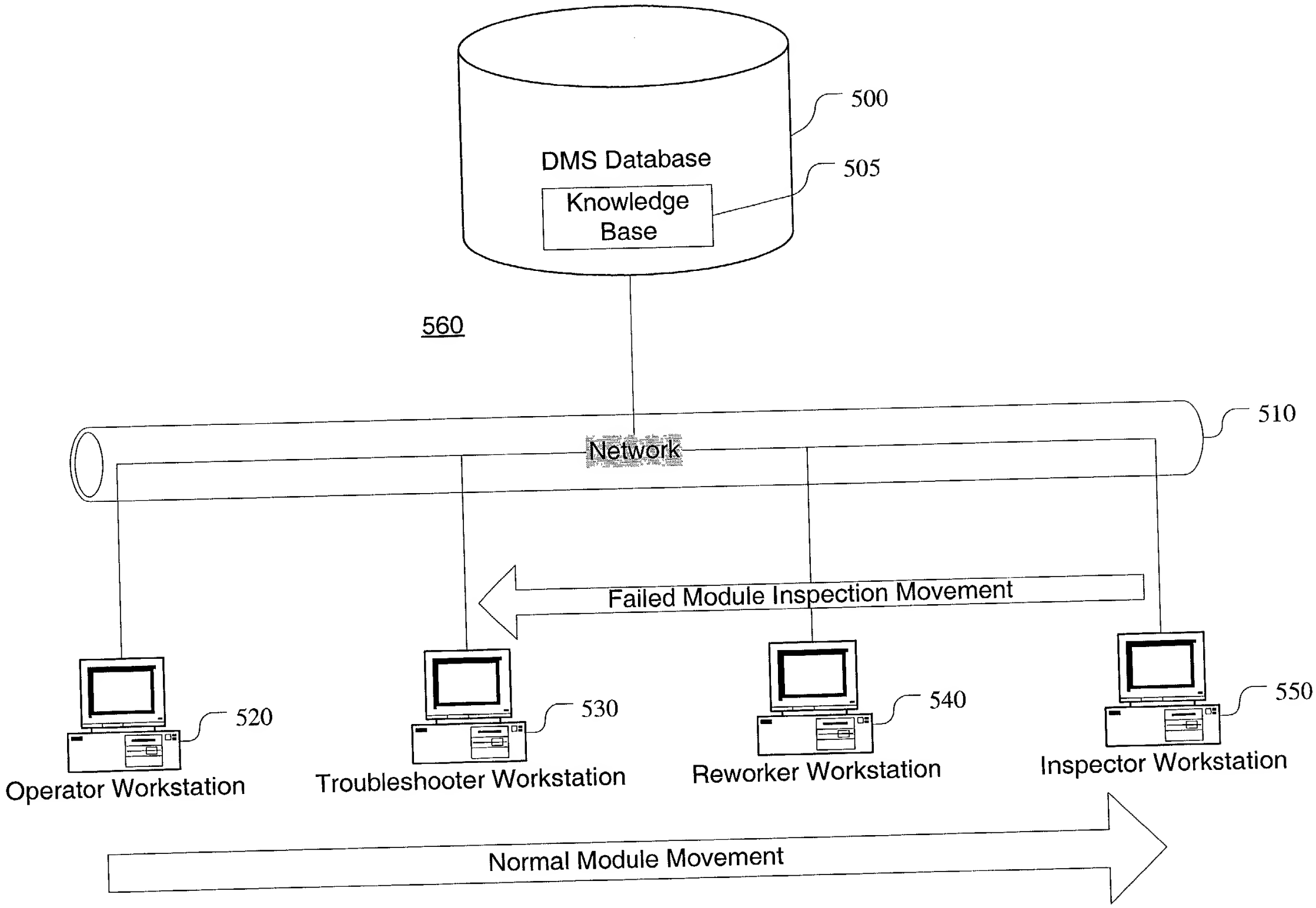
DMS Database
Knowledge Base
500
505
560
510
Network
Failed Module Inspection Movement
520
Operator Workstation
530
Troubleshooter Workstation
540
Reworker Workstation
550
Inspector Workstation
Normal Module Movement

Figure 1

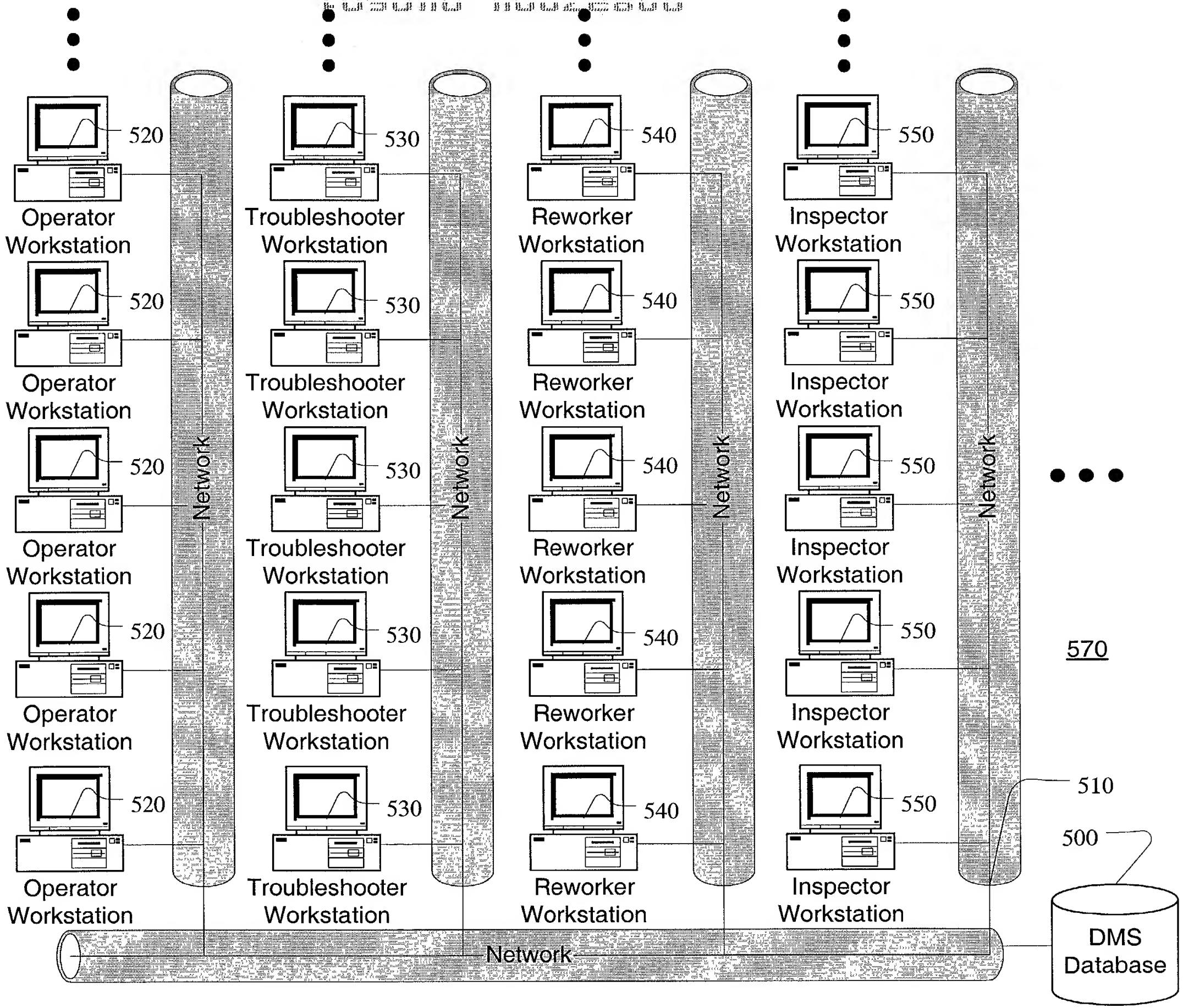
Operator Workstation
Troubleshooter Workstation
Reworker Workstation
Inspector Workstation
520
530
540
550
Network
570
510
500
DMS Database

Figure 2

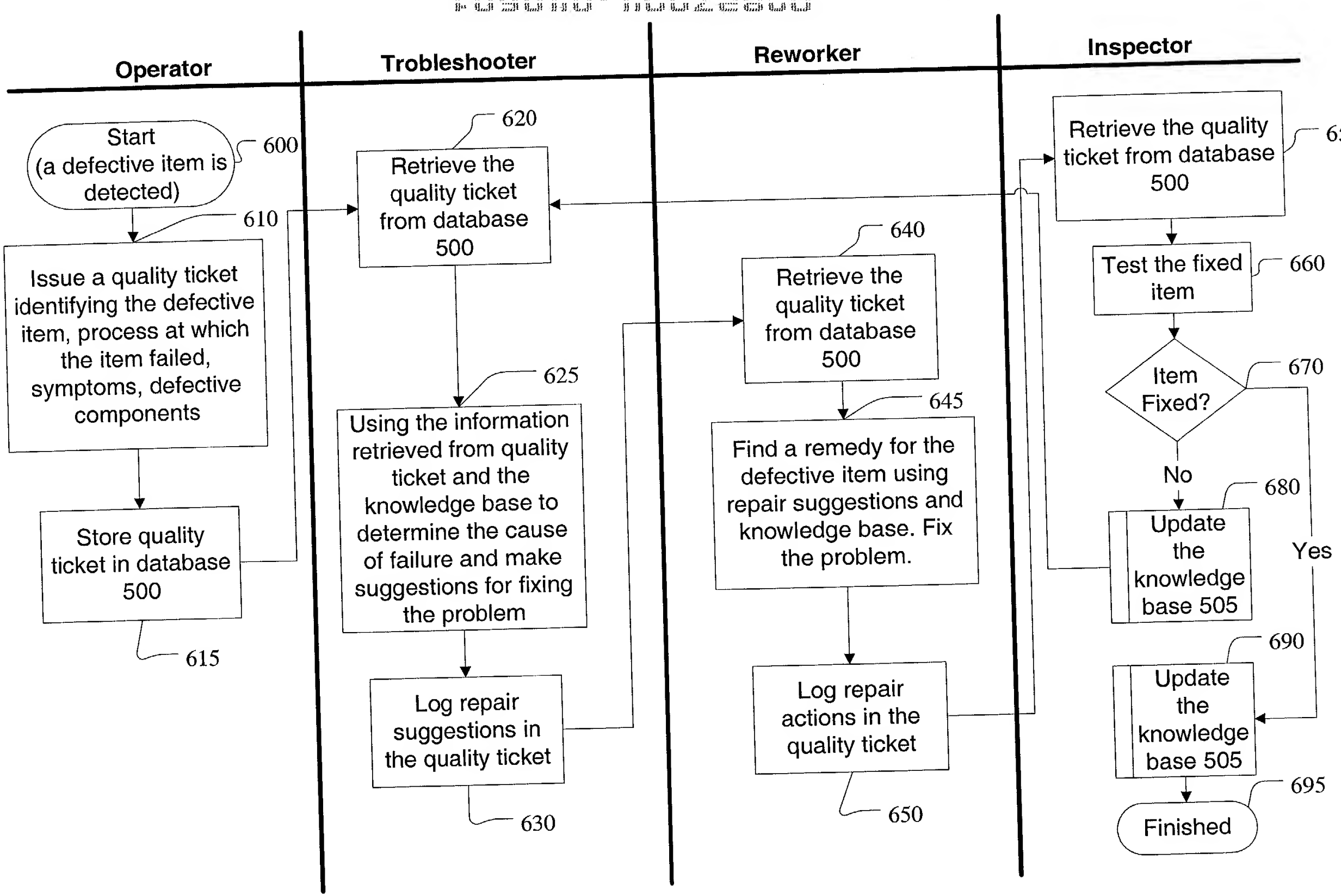
Operator
Trobleshooter
Reworker
Inspector
Start (a defective item is detected)
600
Issue a quality ticket identifying the defective item, process at which the item failed, symptoms, defective components
610
Store quality ticket in database 500
615
Retrieve the quality ticket from database 500
620
Using the information retrieved from quality ticket and the knowledge base to determine the cause of failure and make suggestions for fixing the problem
625
Log repair suggestions in the quality ticket
630
Retrieve the quality ticket from database 500
640
Find a remedy for the defective item using repair suggestions and knowledge base. Fix the problem.
645
Log repair actions in the quality ticket
650
Retrieve the quality ticket from database 500
655
Test the fixed item
660
Item Fixed?
670
No
Yes
Update the knowledge base 505
680
Update the knowledge base 505
690
Finished
695

Figure 3

PATENT PENDING

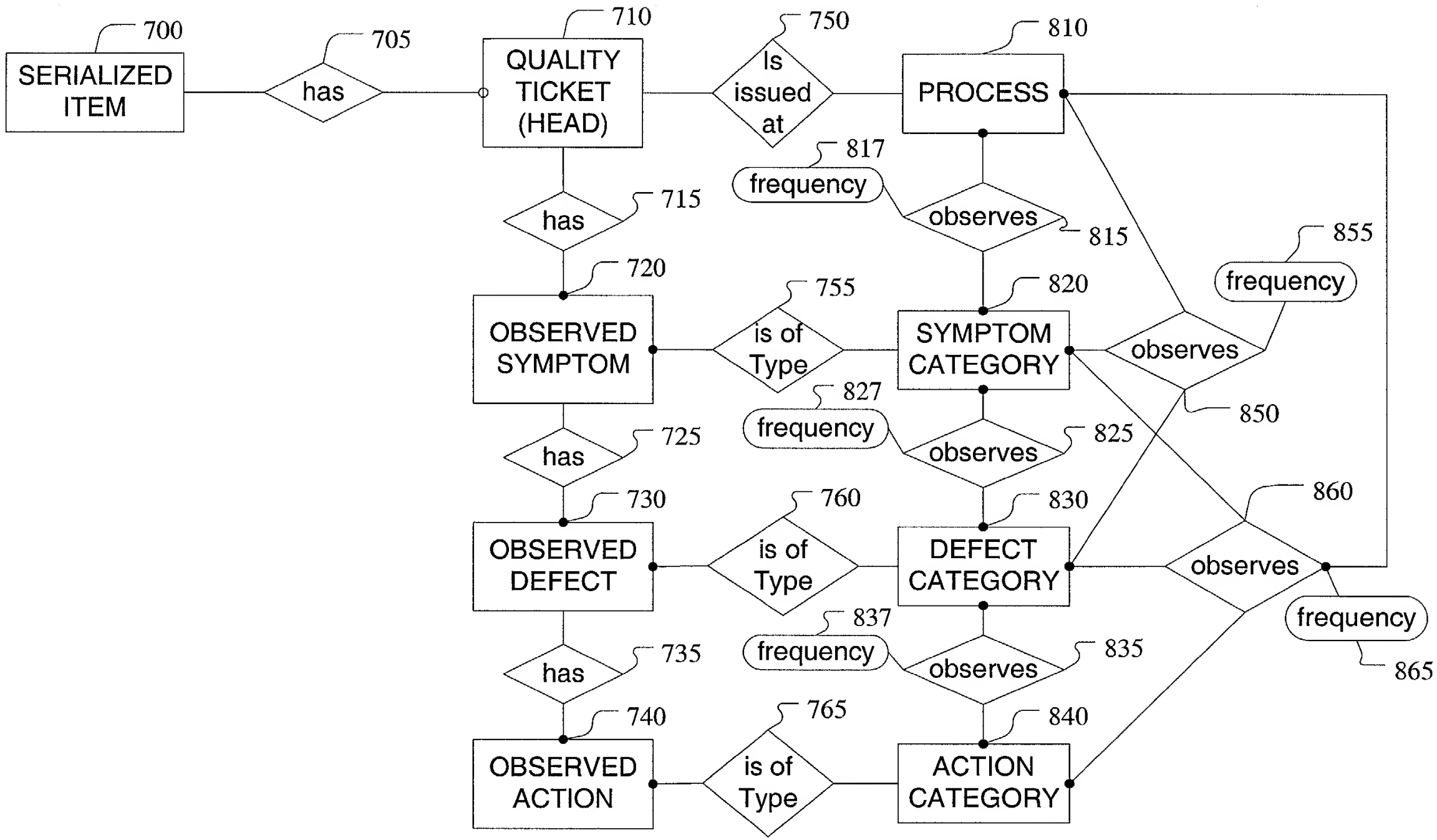

Figure 4

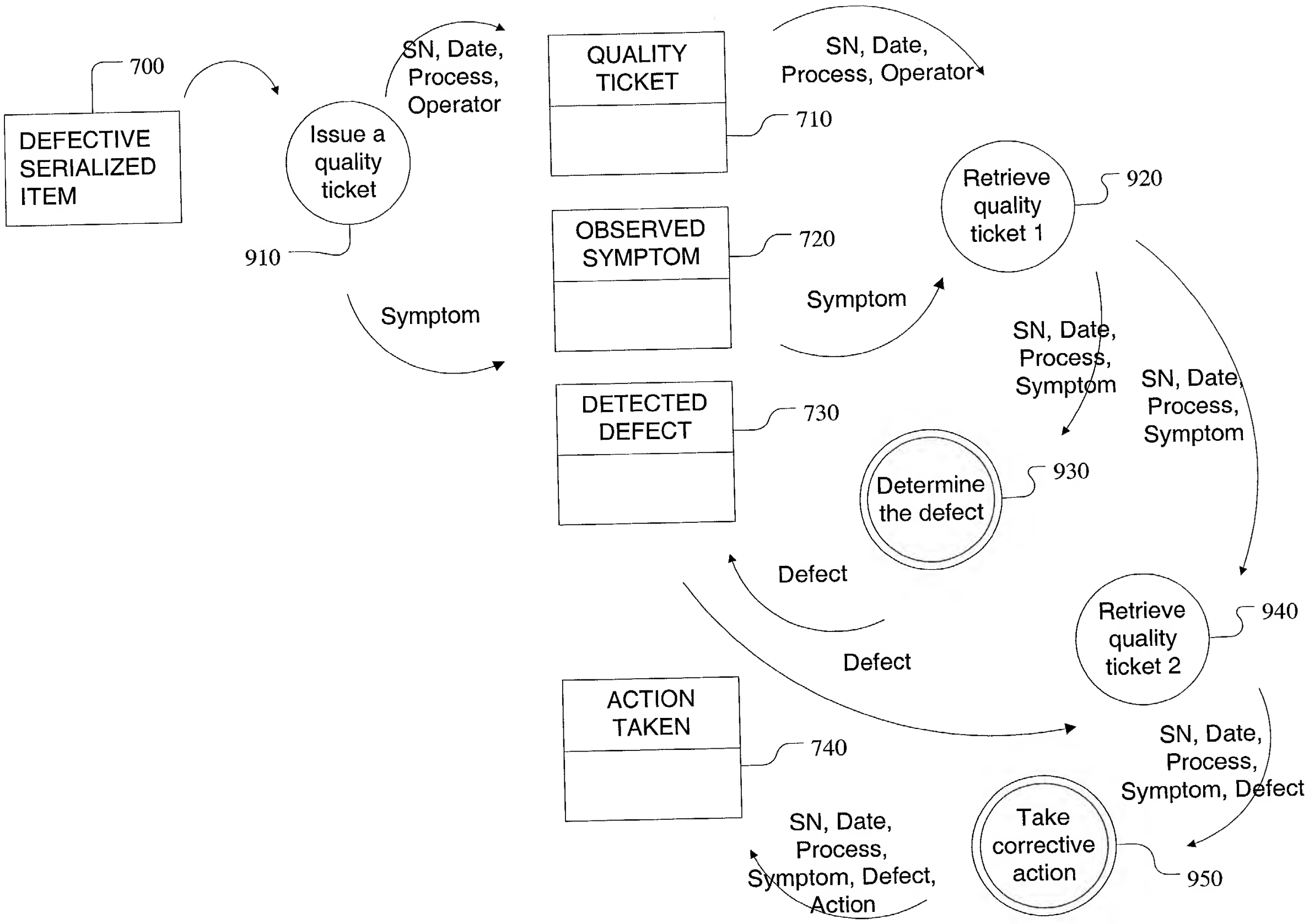
700
DEFECTIVE SERIALIZED ITEM
Issue a quality ticket
910
SN, Date, Process, Operator
QUALITY TICKET
710
SN, Date, Process, Operator
OBSERVED SYMPTOM
720
Symptom
Symptom
DETECTED DEFECT
730
Retrieve quality ticket 1
920
SN, Date, Process, Symptom
SN, Date, Process, Symptom
Determine the defect
930
Defect
Defect
Retrieve quality ticket 2
940
ACTION TAKEN
740
SN, Date, Process, Symptom, Defect
SN, Date, Process, Symptom, Defect, Action
Take corrective action
950

Figure 5

PENDING DOCUMENT

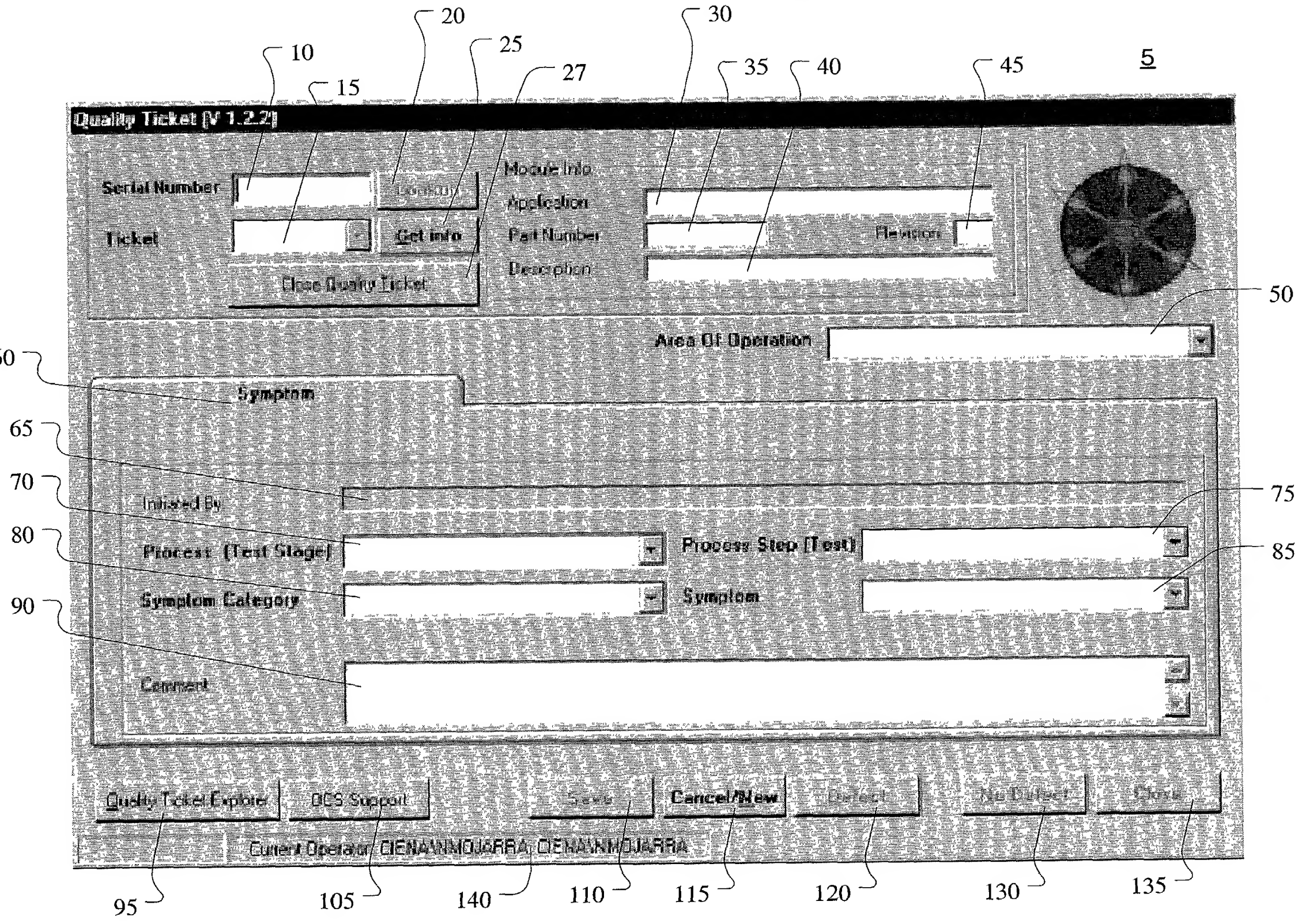

Figure 6a

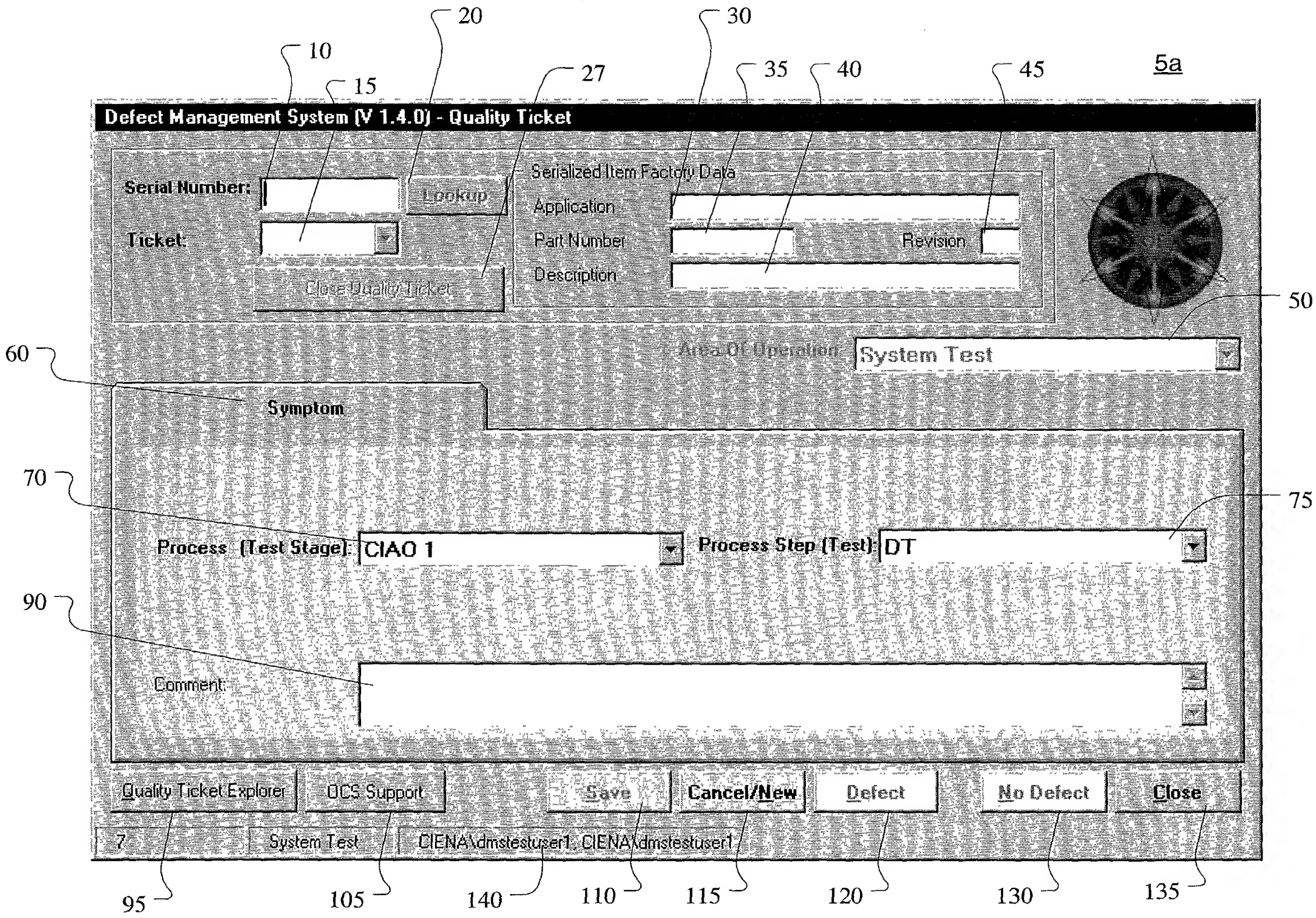
5a
10
15
20
27
30
35
40
45
50
60
70
75
90
Defect Management System (V 1.4.0) - Quality Ticket
Serial Number:
Lookup
Ticket:
Close Quality Ticket
Serialized Item Factory Data
Application
Part Number
Revision
Description
Area Of Operation:
System Test
Symptom
Process (Test Stage):
CIAO 1
Process Step (Test):
DT
Comment:
Quality Ticket Explorer
OCS Support
Save
Cancel/New
Defect
No Defect
Close
7
System Test
CIENA\dmstestuser1
CIENA\dmstestuser1
95
105
140
110
115
120
130
135

Figure 6b

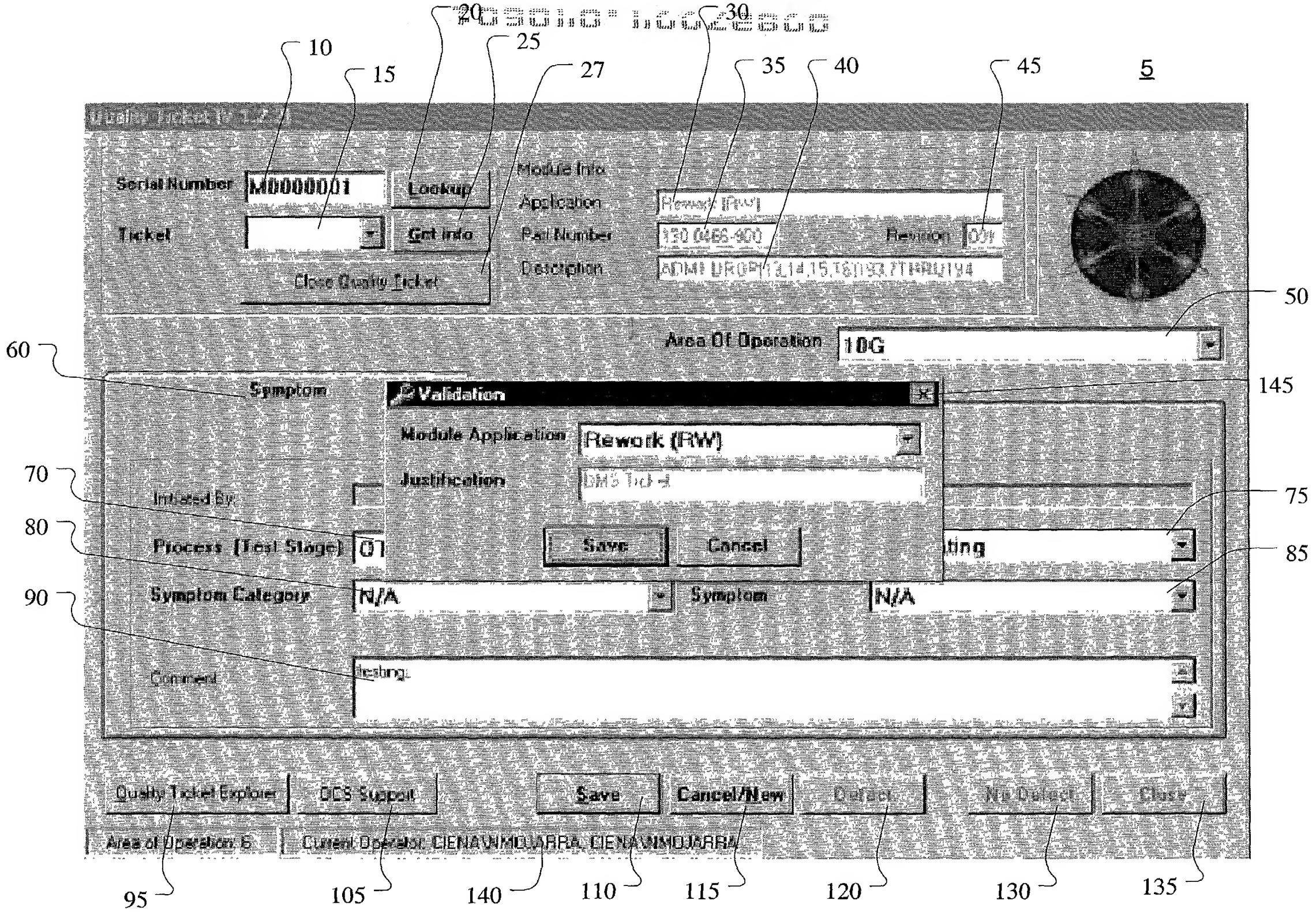
10
15
20
25
27
30
35
40
45
5
Serial Number
M0000001
Lookup
Ticket
Get Info
Close Quality Ticket
Module Info
Application
Rework (RW)
Part Number
130 0466 400
Revision
001
Description
ADM URGR13,14,15,T6I93,7THRU194
Area Of Operation
10G
50
60
Symptom
Validation
145
Module Application
Rework (RW)
Justification
DMS Ticket
Saved By
70
Process (Test Stage)
01
Save
Cancel
75
80
Symptom Category
N/A
Symptom
N/A
85
90
Comment
testing
Quality Ticket Explorer
OCS Support
Save
Cancel/New
Delete
No Defect
Close
Area of Operation: 6
Current Operator: CIENA\MMOJARRA, CIENA\MMOJARRA
95
105
140
110
115
120
130
135

Figure 7

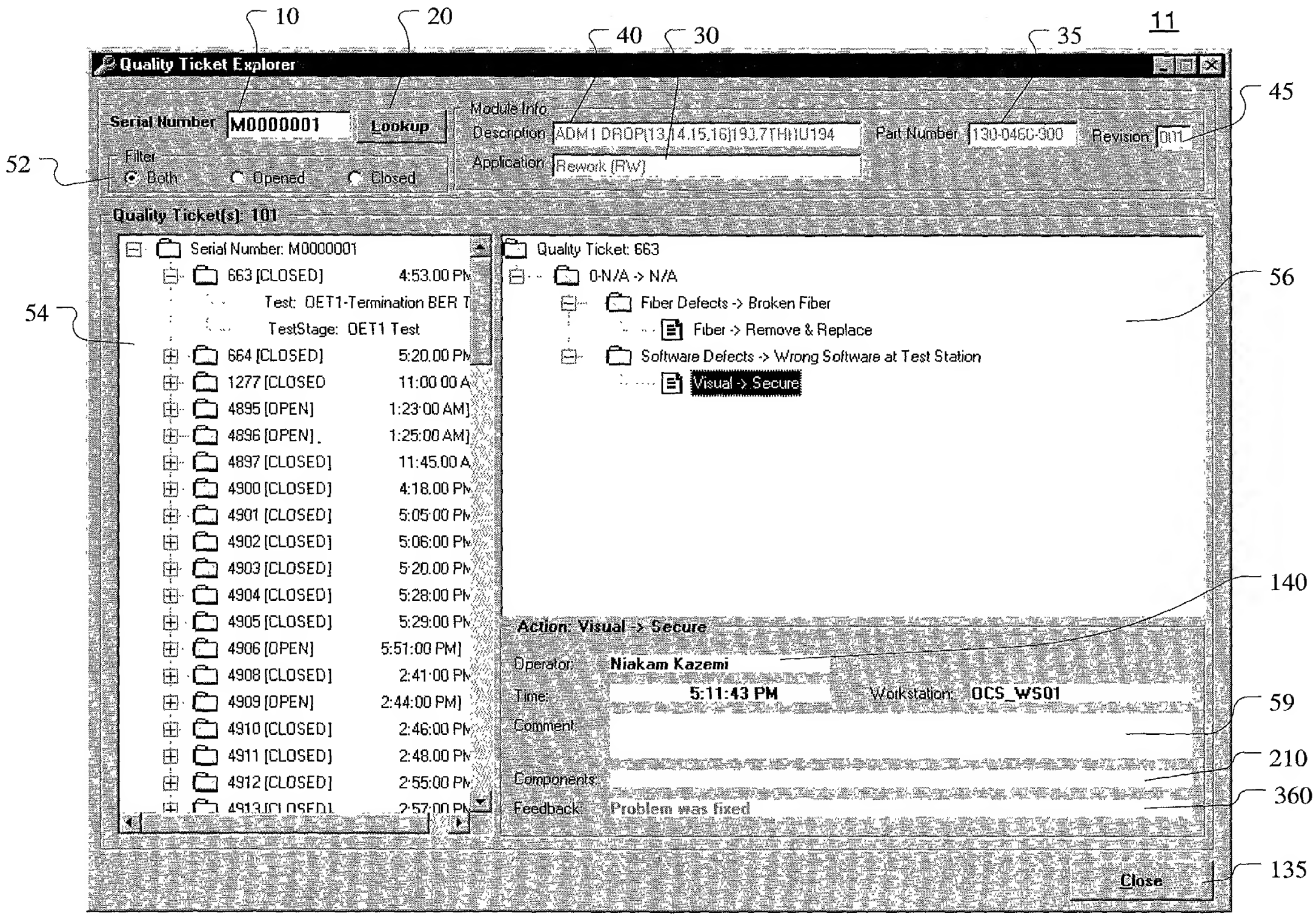
10
20
40
30
35
11
45
52
54
56
140
59
210
360
135
Quality Ticket Explorer
Serial Number
M0000001
Lookup
Module Info
Description
ADM1 DROP(13,14,15,16)19J.7TH1U194
Part Number
130-0460-900
Revision
011
Application
Rework (RW)
Filter
Both
Opened
Closed
Quality Ticket(s): 101
Serial Number: M0000001
663 [CLOSED] 4:53:00 PM
Test: OET1-Termination BER T
TestStage: OET1 Test
664 [CLOSED] 5:20:00 PM
1277 [CLOSED 11:00:00 A
4895 [OPEN] 1:23:00 AM]
4896 [OPEN] 1:25:00 AM]
4897 [CLOSED] 11:45:00 A
4900 [CLOSED] 4:18:00 PM
4901 [CLOSED] 5:05:00 PM
4902 [CLOSED] 5:06:00 PM
4903 [CLOSED] 5:20:00 PM
4904 [CLOSED] 5:28:00 PM
4905 [CLOSED] 5:29:00 PM
4906 [OPEN] 5:51:00 PM]
4908 [CLOSED] 2:41:00 PM
4909 [OPEN] 2:44:00 PM]
4910 [CLOSED] 2:46:00 PM
4911 [CLOSED] 2:48:00 PM
4912 [CLOSED] 2:55:00 PM
4913 [CLOSED] 2:57:00 PM
Quality Ticket: 663
0-N/A -> N/A
Fiber Defects -> Broken Fiber
Fiber -> Remove & Replace
Software Defects -> Wrong Software at Test Station
Visual -> Secure
Action: Visual -> Secure
Operator:
Niakam Kazemi
Time:
5:11:43 PM
Workstation:
OCS_WS01
Comment:
Components:
Feedback:
Problem was fixed
Close

Figure 8

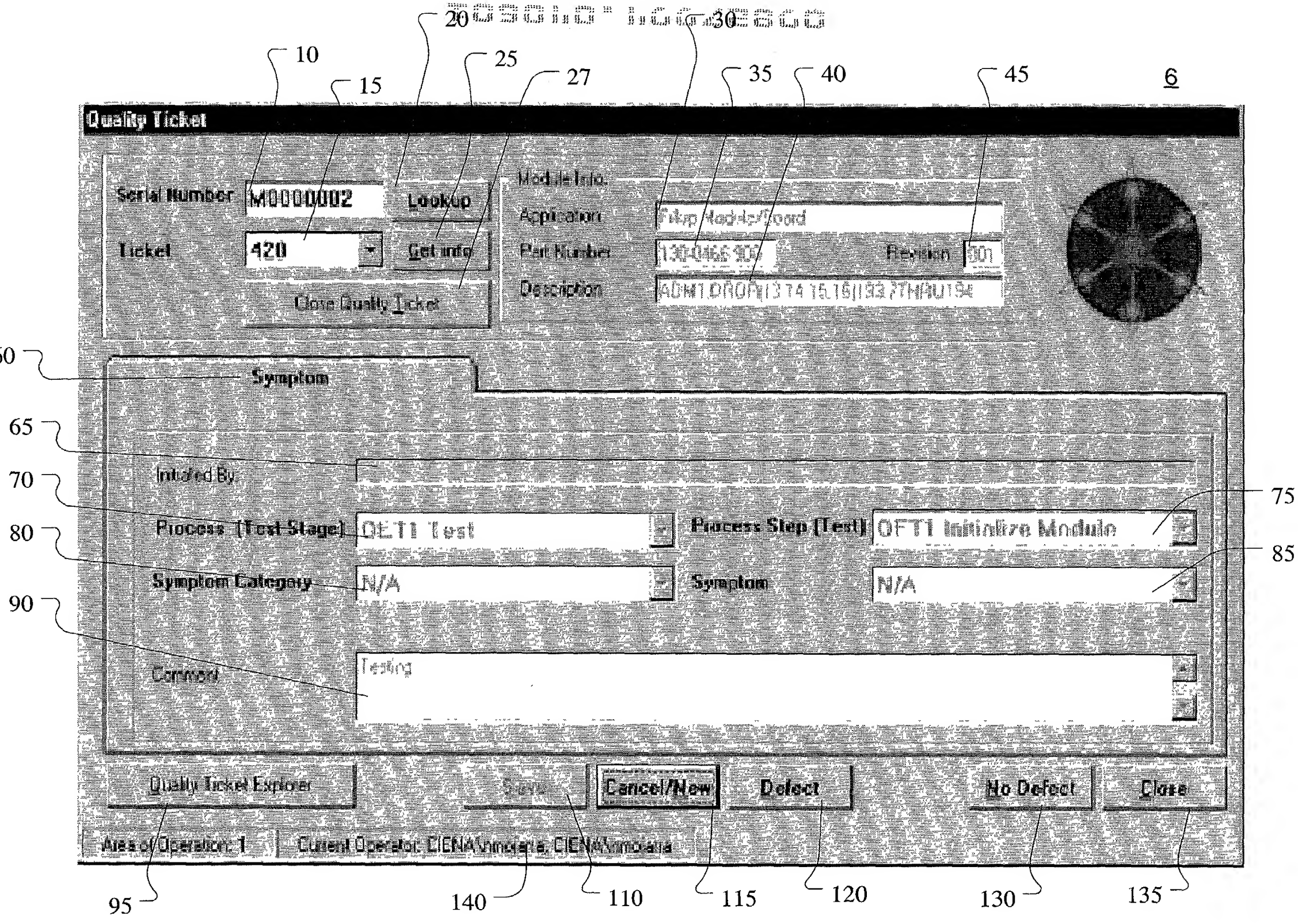
Quality Ticket
Serial Number
M00000002
Lookup
Ticket
420
Get Info
Close Quality Ticket
Module Info
Application
Part Number
Revision
Description
Symptom
Initial By
Process [Test Stage]
QFT1 Test
Process Step [Test]
QFT1 Initialize Module
Symptom Category
N/A
Symptom
N/A
Comment
Testing
Quality Ticket Explorer
Save
Cancel/New
Defect
No Defect
Close
Area of Operation: 1
Current Operator: CIENA\vmware, CIENA\vmware
10
15
20
25
27
30
35
40
45
6
60
65
70
75
80
85
90
95
140
110
115
120
130
135

Figure 9

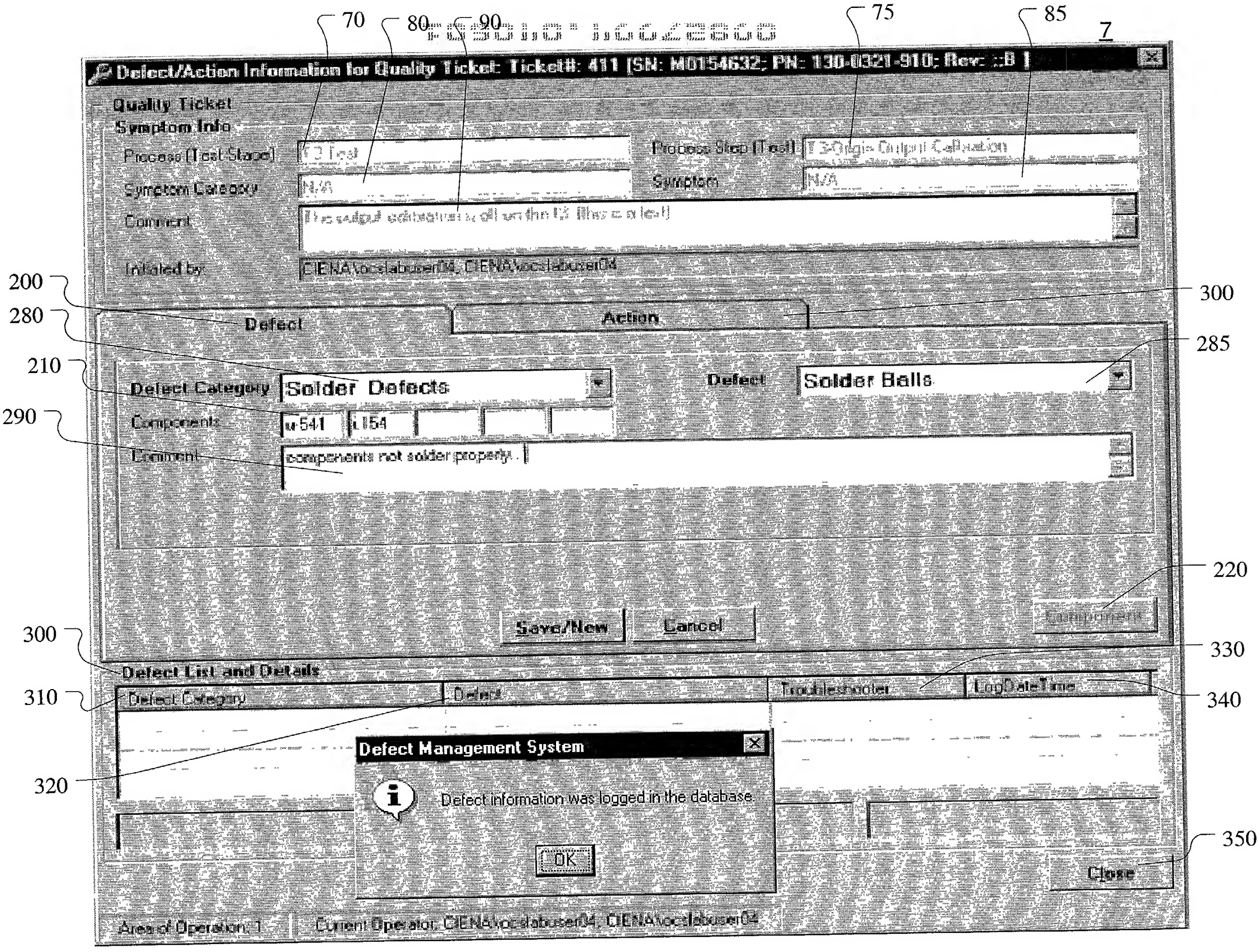
7
70
80
90
75
85
Defect/Action Information for Quality Ticket: Ticket#: 411 [SN: M0154632; PN: 130-0321-910; Rev: :B]
Quality Ticket
Symptom Info
Process [Test Stage]
Process Step [Test]
Symptom Category
Symptom
Comment
Initialed by
200
280
210
290
300
285
Defect
Action
Defect Category
Solder Defects
Defect
Solder Balls
Components
u541
L154
Comment
components not solder properly.
Save/New
Cancel
220
300
330
340
310
320
Defect List and Details
Defect Category
Defect
TroubleshootNet
LogDateTime
Defect Management System
Defect information was logged in the database.
OK
350
Close
Area of Operation: 1
Current Operator: CIENA\ocslabuser04, CIENA\ocslabuser04

Figure 10a

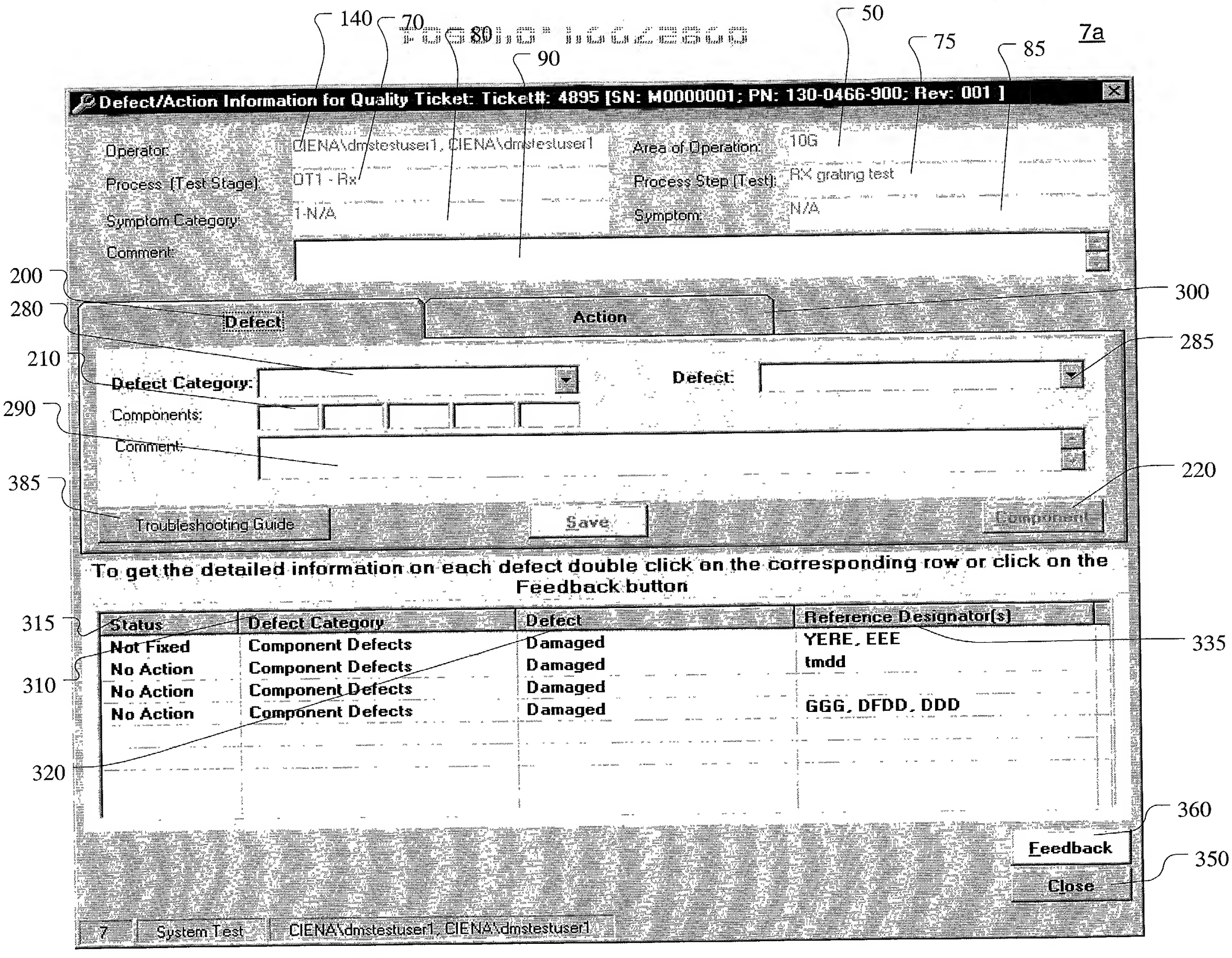
7a
140
70
80
90
50
75
85
Defect/Action Information for Quality Ticket: Ticket#: 4895 [SN: M0000001; PN: 130-0466-900; Rev: 001]
Operator:
CIENA\dmstestuser1, CIENA\dmstestuser1
Area of Operation:
10G
Process (Test Stage):
OT1 - Rx
Process Step (Test):
RX grating test
Symptom Category:
1-N/A
Symptom:
N/A
Comment:
200
280
210
290
385
300
285
220
Defect
Action
Defect Category:
Defect:
Components:
Comment:
Troubleshooting Guide
Save
Component
To get the detailed information on each defect double click on the corresponding row or click on the Feedback button
315
310
320
335
Status
Defect Category
Defect
Reference Designator(s)
Not Fixed
Component Defects
Damaged
YERE, EEE
No Action
Component Defects
Damaged
tmdd
No Action
Component Defects
Damaged
No Action
Component Defects
Damaged
GGG, DFDD, DDD
360
350
Feedback
Close
7
System Test
CIENA\dmstestuser1, CIENA\dmstestuser1

Figure 10b

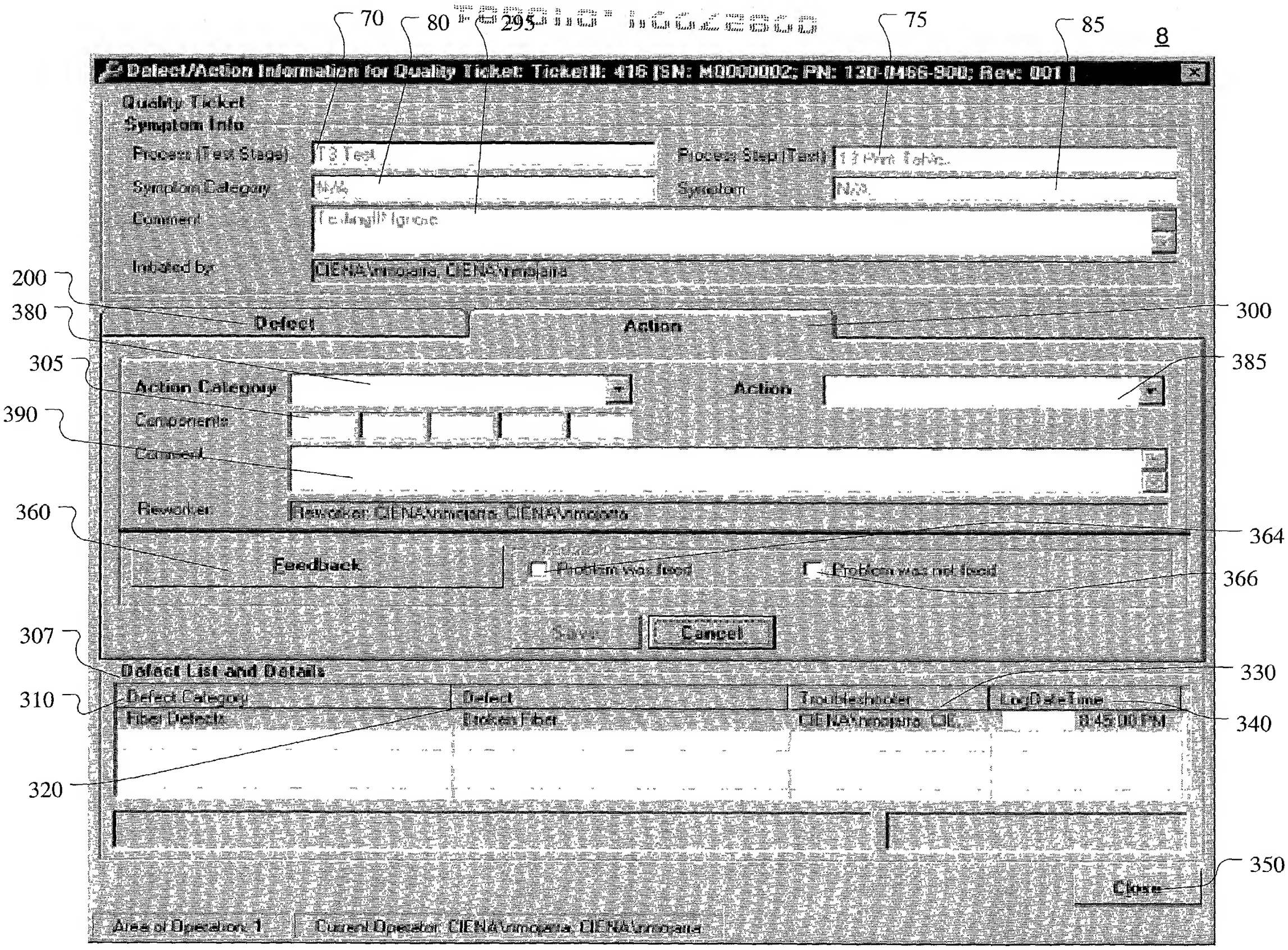
70
80
295
75
85
8
Defect/Action Information for Quality Ticket: TicketII: 416 [SN: M0000002; PN: 130-0466-900; Rev: 001]
Quality Ticket
Symptom Info
Process (Test Stage)
T3 Test
Process Step (Test)
Symptom Category
N/A
Symptom
N/A
Comment
Initiated by
200
380
305
390
360
300
385
364
366
307
330
310
340
320
350
Defect
Action
Action Category
Action
Components
Comment
Reworker
Feedback
Problem was fixed
Problem was not fixed
Save
Cancel
Defect List and Details
Defect Category
Defect
Troubleshooter
Log Date Time
Fiber Defects
Broken Fiber
8:45:00 PM
Close
Area of Operation: 1
Current Operator: CIENA\mmoore, CIENA\mmoore

Figure 11a

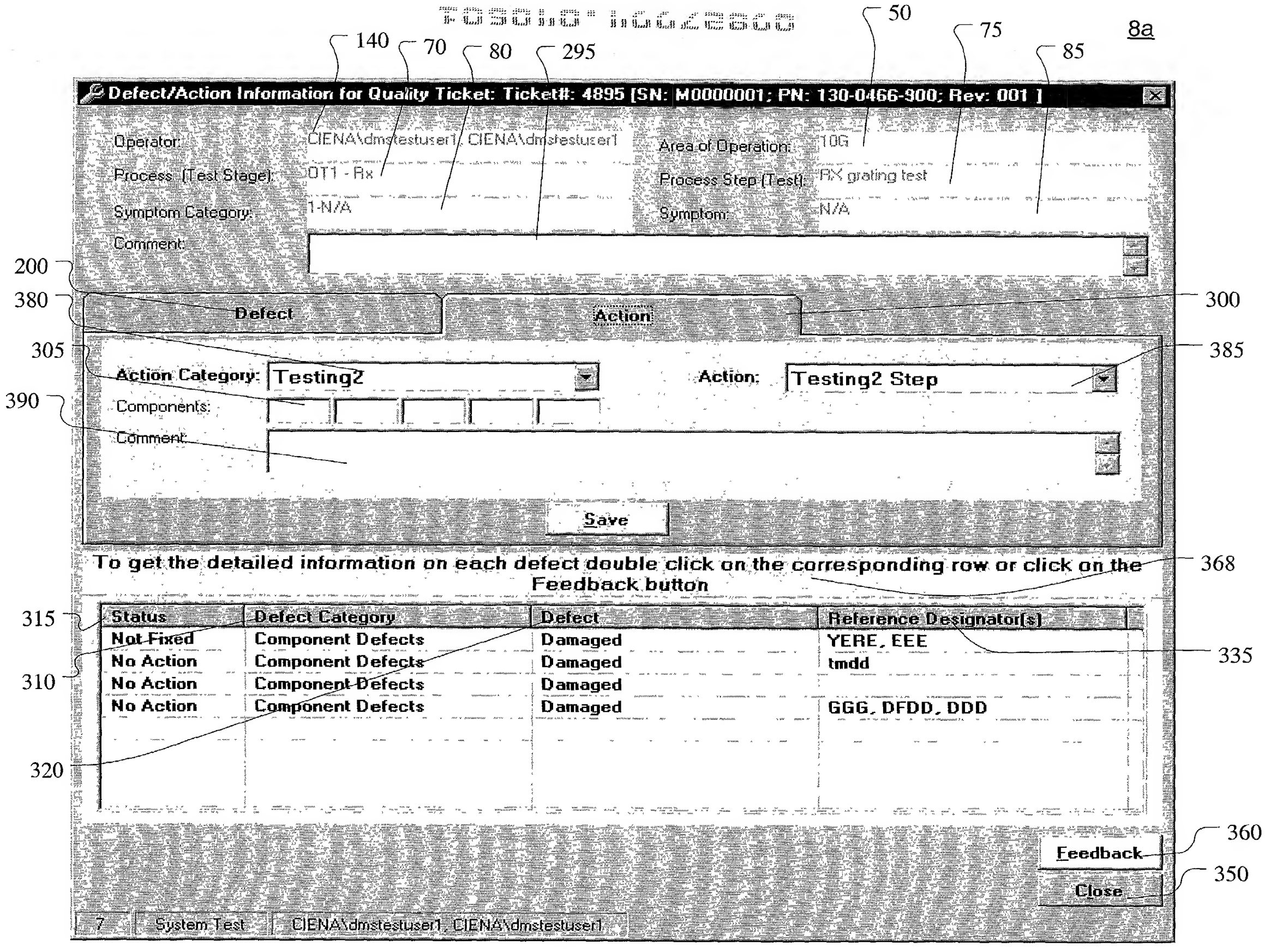
Defect/Action Information for Quality Ticket: Ticket#: 4895 [SN: M0000001; PN: 130-0466-900; Rev: 001]
Operator:
CIENA\dmstestuser1, CIENA\dmstestuser1
Area of Operation:
10G
Process (Test Stage):
OT1 - Rx
Process Step (Test):
RX grating test
Symptom Category:
1-N/A
Symptom:
N/A
Comment:
Defect
Action
Action Category:
Testing2
Action:
Testing2 Step
Components:
Comment:
Save
To get the detailed information on each defect double click on the corresponding row or click on the Feedback button
Status
Defect Category
Defect
Reference Designator(s)
Not Fixed
Component Defects
Damaged
YERE, EEE
No Action
Component Defects
Damaged
tmdd
No Action
Component Defects
Damaged
No Action
Component Defects
Damaged
GGG, DFDD, DDD
Feedback
Close
7
System Test
CIENA\dmstestuser1, CIENA\dmstestuser1
140
70
80
295
50
75
85
200
380
305
390
300
385
315
310
320
368
335
360
350

Figure 11b

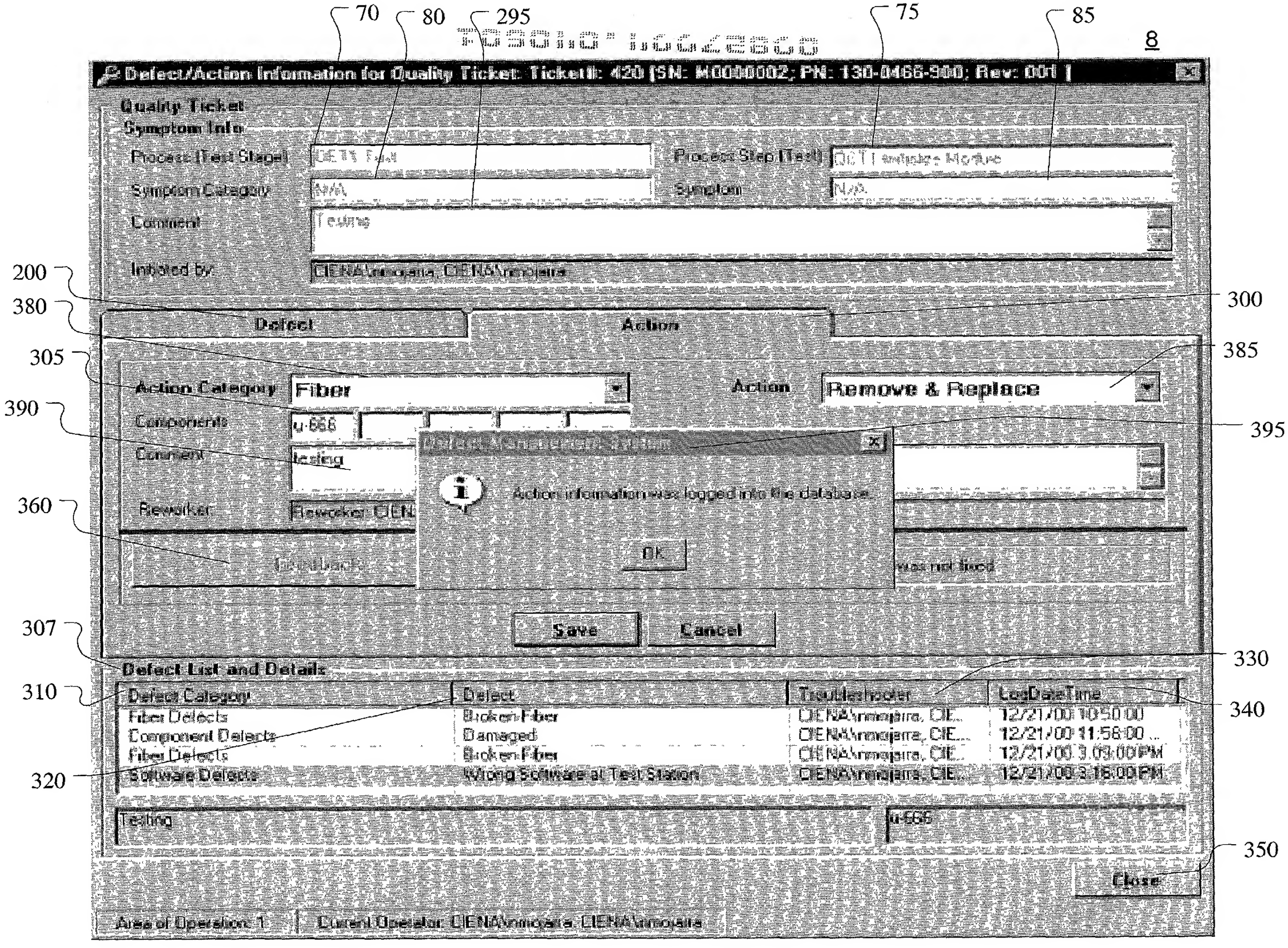
70
80
295
75
85
8
Defect/Action Information for Quality Ticket: Ticket#: 420 [SN: M00000002; PN: 130-0466-900; Rev: 001]
Quality Ticket
Symptom Info
Process (Test Stage)
Process Step (Test)
Symptom Category
Symptom
Comment
Testing
Initiated by
200
380
300
Defect
Action
305
385
Action Category
Fiber
Action
Remove & Replace
390
395
Components
u-666
Comment
testing
Reworker
360
Action information was logged into the database.
OK
was not fixed
Save
Cancel
307
Defect List and Details
330
310
340
Defect Category
Defect
Troubleshooter
LogDateTime
Fiber Defects
Broken Fiber
Component Defects
Damaged
Fiber Defects
Broken Fiber
Software Defects
Wrong Software at Test Station
320
Testing
u-666
350
Close
Area of Operation: 1
Current Operator: CIENA\mmojaira, CIENA\mmojaira

Figure 12

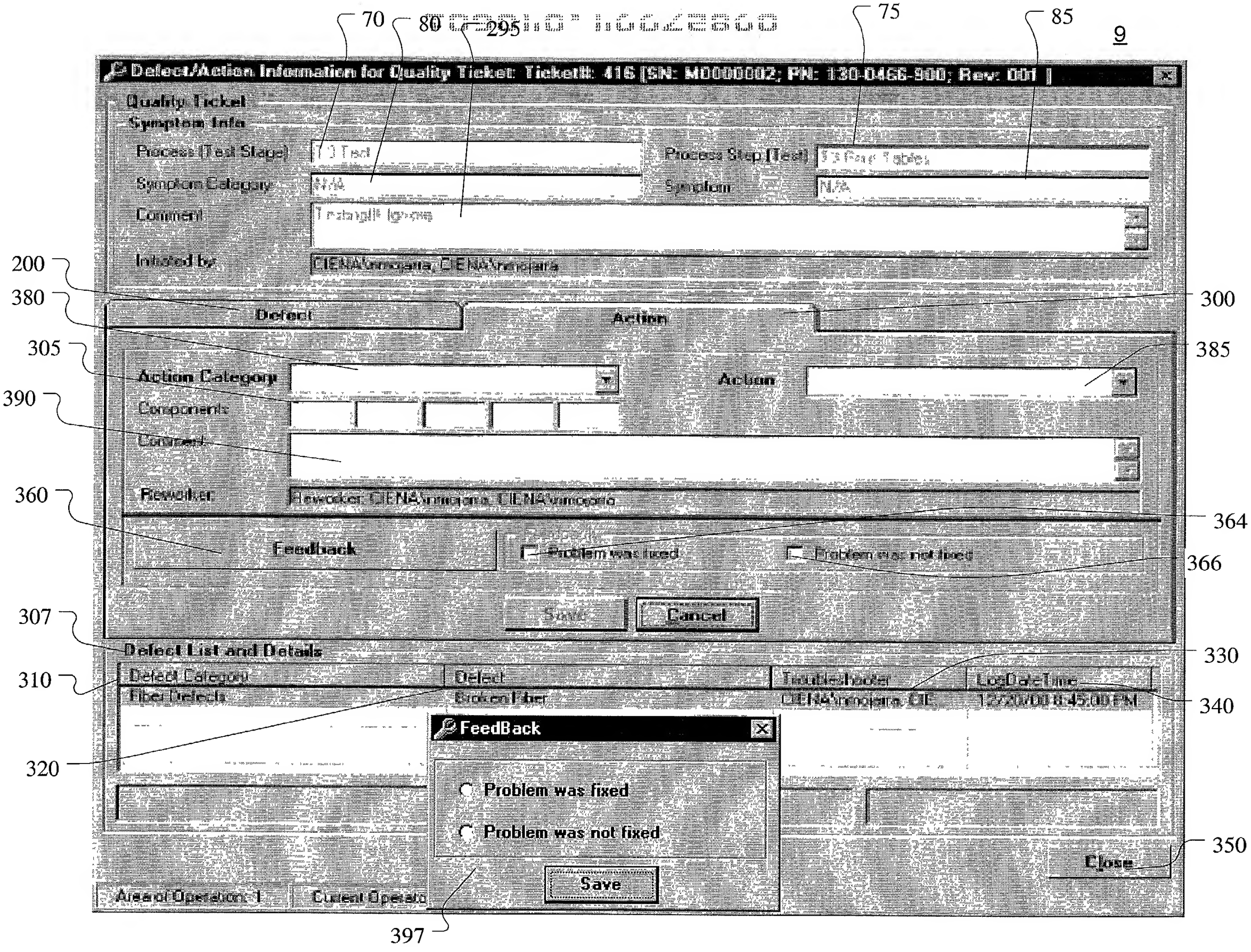
70
80
295
75
85
9
Defect/Action Information for Quality Ticket: TicketN: 416 [SN: M00000002; PN: 130-0466-900; Rev: 001]
Quality Ticket
Symptom Info
Process (Test Stage)
Process Step (Test)
Symptom Category
Symptom
Comment
Initiated by
200
380
300
Defect
Action
305
385
Action Category
Action
390
Components
Comment
360
Feedback
364
Problem was fixed
Problem was not fixed
366
Save
Cancel
307
Defect List and Details
330
310
Defect Category
Defect
Trouble Ticket
Log Date Time
Fiber Defects
Broken Fiber
340
320
FeedBack
Problem was fixed
Problem was not fixed
Save
350
Close
Area of Operation: 1
Current Operato
397

Figure 13

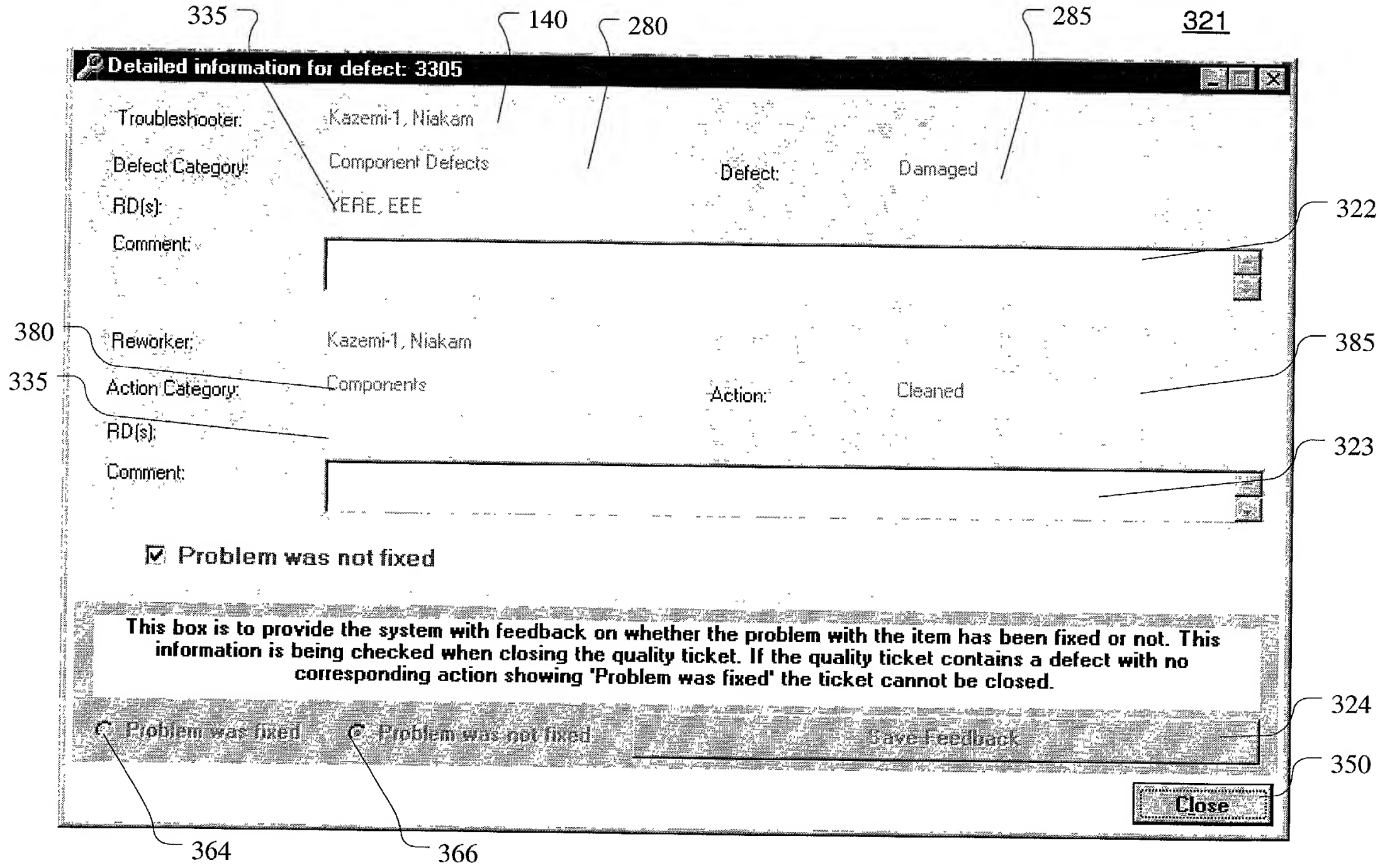
335
140
280
285
321
Detailed information for defect: 3305
Troubleshooter:
Kazemi-1, Niakam
Defect Category:
Component Defects
Defect:
Damaged
RD(s):
YERE, EEE
Comment:
322
380
Reworker:
Kazemi-1, Niakam
385
335
Action Category:
Components
Action:
Cleaned
RD(s):
Comment:
323
Problem was not fixed
This box is to provide the system with feedback on whether the problem with the item has been fixed or not. This information is being checked when closing the quality ticket. If the quality ticket contains a defect with no corresponding action showing 'Problem was fixed' the ticket cannot be closed.
Problem was fixed
Problem was not fixed
Save Feedback
324
350
Close
364
366

Figure 14

386

387 388 389

Troubleshooting Guide

The following is a list of the most likely causes for the specified SYMPTOM

Defect Category	Defect	Frequency
Component Defects	Defective Component	58
Testing Defects	Test Error	51
Component Defects	Damaged	26
Fiber Defects	Broken Fiber	11
Connector Defects	Pitted	10
Solder Defects	Insufficient Solder	8
Testing Defects	High Insertion loss	6
Solder Defects	Excessive Solder	5
Testing Defects	Proof Test Break	5
Component Defects	Wrong Component	5

350

Close

Figure 15